MARKET FORGE
INDUSTRIES INC.

STERILMATIC
DIGITAL ELECTRIC STERILIZER
PARTS AND SERVICE MANUAL

EFFECTIVE JUNE 12, 2015

Superseding All Previous Parts Lists.
The Company reserves the right to make substitution in the event that items specified are not available.
ERRORS: Descriptive and/or typographic errors are subject to correction.

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DOOR ASSEMBLY & ADJUSTMENT

STERILMATIC DOOR ASSEMBLY

The Door of the Sterilmatic has been engineered to establish a positive method of sealing the steam pressure within the sterilizing cylinder. As steam pressure builds up within the cylinder, the door seal will tend to become more positive.

However, the door should be adjusted to make a good initial seal between the door gasket and the door opening without the added assistance of internal cylinder steam pressure with the simple action of securing the door handle down in a locked position, the door gasket should be sufficiently compressed against the door opening, all the way around to prevent any steam leakage from occurring.

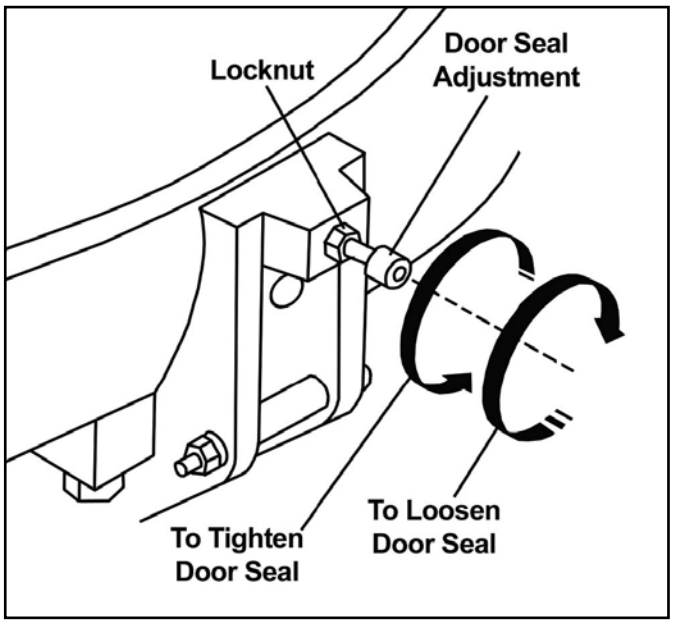


Figure 1

DOOR ADJUSTMENT

The Door Adjustment is Located in the Fulcrum Casting at the base of the door opening. This adjustment employs the use of a screw and locknut in order to adjust the Sterilmatic Door to a tighter closed position (to prevent steam from leaking by the door gasket as pressure builds up), it is necessary to loosen the locknut and back off the screw at least one-quarter of a turn and re-tighten the locknut.

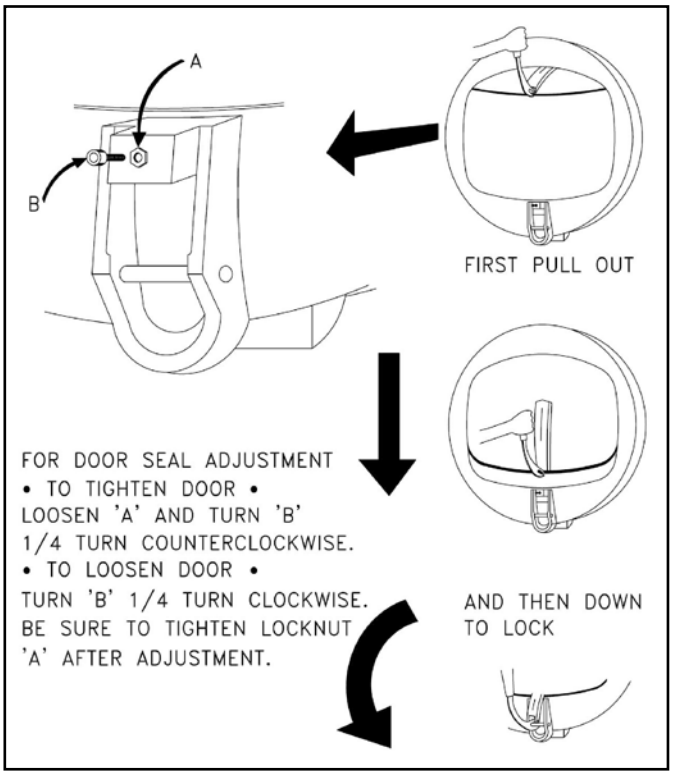


Figure 2

THE DOOR GASKET

Keep the gasket clean. With normal closing and locking of the door assembly, a steam-tight seal should be made between the door gasket and the door opening. This seal cannot be maintained if particles of foreign matter are allowed to accumulate upon either of the contacting surfaces.

If there is leakage by the door gasket before a steam build-up within the steam chamber and leakage does not stop when the sterilizer reaches sterilizing temperature and pressure than regard the door assembly as improperly adjusted. A re-adjustment must then be made of the seal adjustment door screw.

To change the door gasket, remove the entire door assembly as a unit. Discard the old gasket, replace it with a new one (no cement is required), and reinstall the door assembly. Make an operational check for leakage and adjust the door, if necessary.

DOOR ASSEMBLY & ADJUSTMENT

DOOR LIFT SPRING

Market Forge supplies door lift springs in sets only. This policy has been found to be in the best interest of the customer. Through continuous use, some of the original qualities of the springs are lost and it becomes advantageous to make replacements to both the left and right door lift springs in the event that one becomes damaged or broken.

Replacement door lift springs are marked with tabs at the factory prior to shipment to identify a right from a left spring. These springs must be installed with the right door lift spring on the right of the door and the left door lift spring on the left of the door as viewed from the front of the sterilizer.

TO REMOVE THE DOOR ASSEMBLY

The Door Assembly can be removed from the inner sterilizing chamber as a unit without the use of any special tools or equipment. However, a systematic approach to this is warranted as the clearances through the portal are close, and much confusion can result if not removed in the sequence described below:

1. First, lift off and remove the two pan supports to expose the door linkage on either side of the inner sterilizing chamber .
2. Raise the door to a fully opened position, and disengage the door spring from each of the door spring studs. Accomplish this by counteracting the force of the door lift spring with one hand while working the end of the door spring off the spring stud with the free hand. Do this on both sides of the door assembly.
3. When the end of the door springs have been completely freed from their respective door spring studs, the door springs on either side of the door assembly can easily be slipped off their studs.
4. Rotate the entire door assembly out through the door opening, passing the door handle through the opening first, and then one end of the door spring as shown in the illustration. The remainder of the door assembly will then pass through the door opening quite easily.
5. To replace the door assembly, reverse the step-by-step procedure described above.

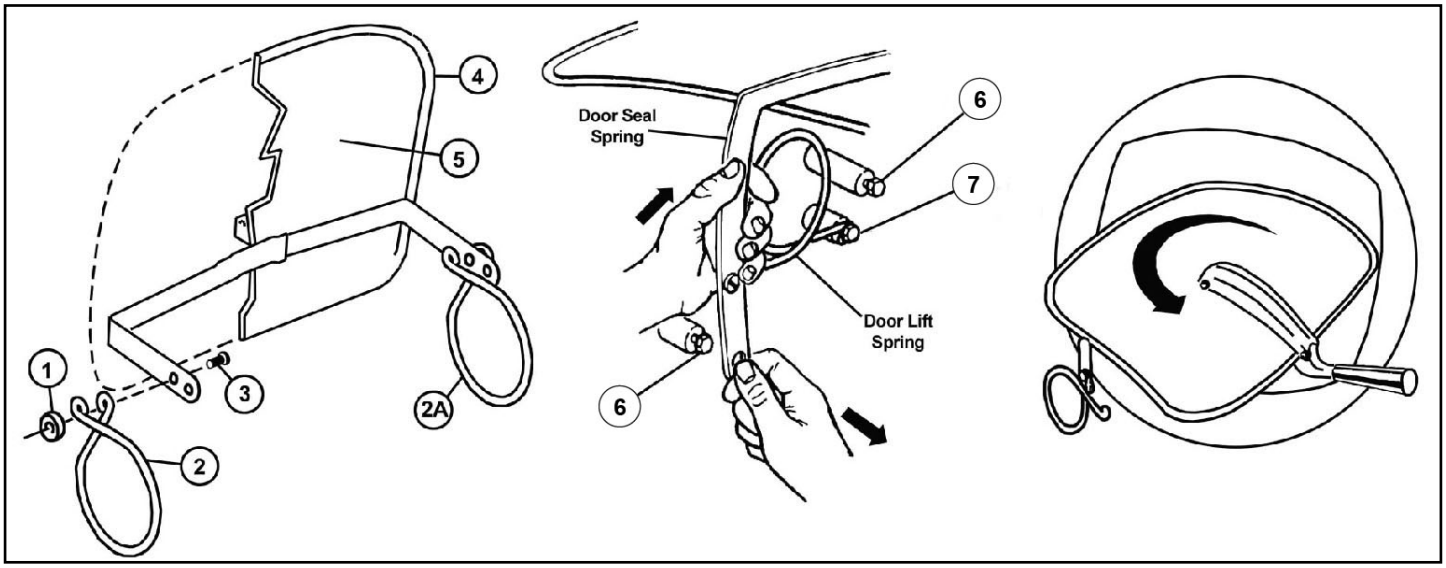


Figure 3

ITEM	PART NO.	DESCRIPTION
1	10-6765	Pivot Spring Bearing
2	91-2718	Right and Left Door Spring (*sold as a pair*)
3	10-1776	10-32 Machine Screw 1/2” Long
4	10-2666	Door Gasket

ITEM	PART NO.	DESCRIPTION
5	95-3204	Door & Door Spring Assembly
-	95-0124	Items 1 through 5
-	10-1937	Pan Support Stud
-	10-1939	Door Lift Spring Stud

FULCRUM AND DRAIN ASSEMBLY

THE FULCRUM & DRAIN ASSEMBLY

The fulcrum and drain assembly is located at the lower front of the sterilizing chamber and furnishes a sturdy anchorage for the door locking system of the door handle. Also provided in this assembly is a means for adjustment of the door seal. The drain port and drain valve provide a means of discharging accumulations of water from within the sterilizing chamber

ROLLER ASSEMBLY (*ITEMS 8 & 9*)

The Roller Assembly must be kept free-rolling at all times. Should this assembly be allowed to become frozen due to lack of lubrication, undue strain will be put on the door handle and the fulcrum casting while the door is being locked. Use only a dry lubricant such as graphite; as oil or grease will tend to attract dirt to this area.

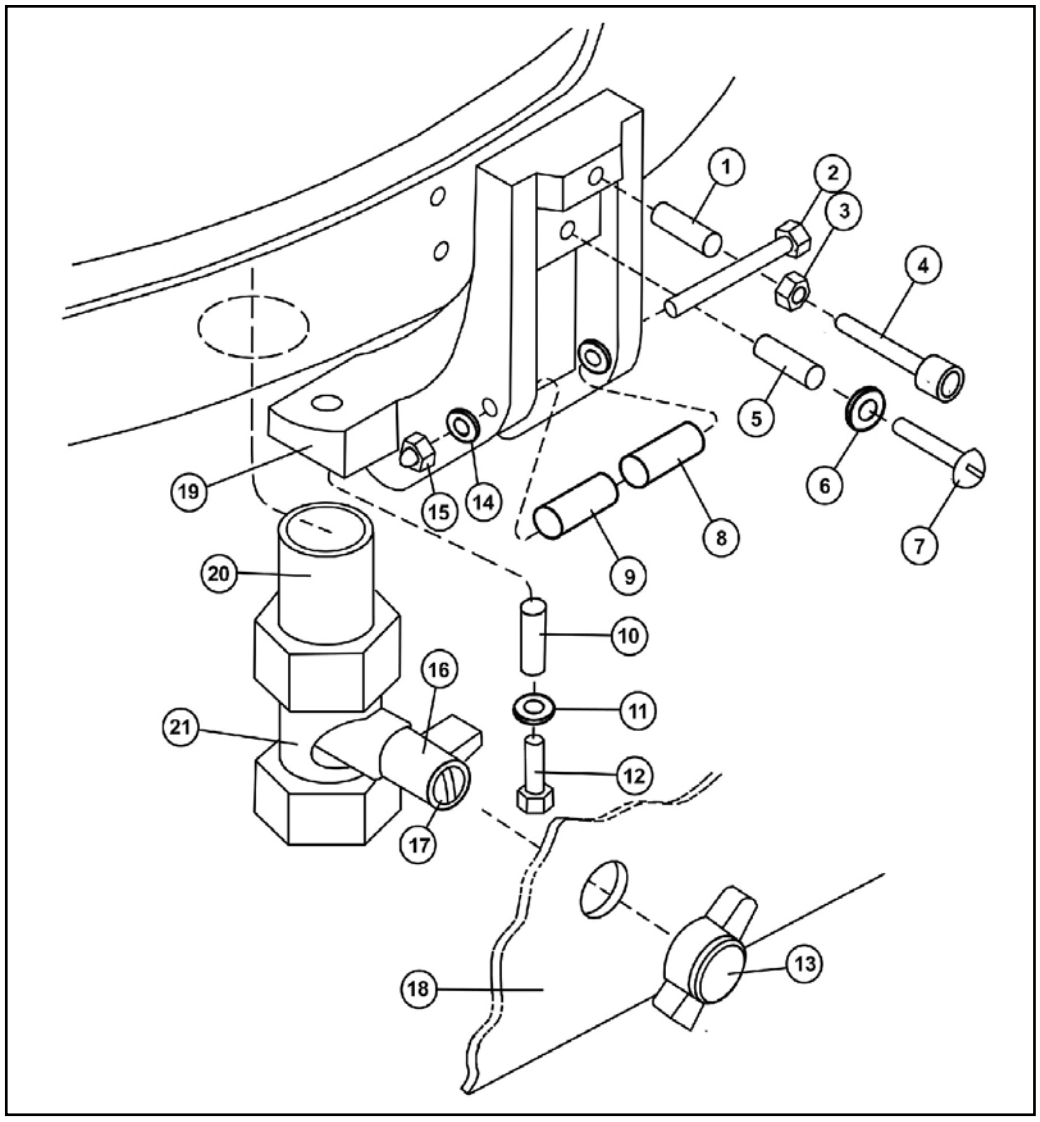


Figure 4

ITEM	PART NO.	DESCRIPTION
1	10-3116	1/4” - 20 X 5/8 helicoil
2	10-1999	10-32 Machine screw, 1 5/8” long
3	10-2358	1/4” - 20 fulcrum nut
4	10-2087	1/4” - 20 allen set screw
5	10-3111	1/4” - 20x 3/8 helicoil
6	10-2513	1/4” Shakeproof washer
7	10-1763	1/4” - 20 Machine screw 3/4” long
8	95-0120	Bearing spacer
9	95-0198	Bronze Bearing
10	10-3111	1/4” - 20 x 3/8 helicoil
11	10-2513	1/4” Shakeproof washer
12	10-1790	1/4” - 20 Cap screw 7/8” long

ITEM	PART NO.	DESCRIPTION
13	10-4485	Drain valve knob
14	10-2514	#10 Shakeproof lockwasher
15	10-2318	10-32 acorn nut
16	95-2643	Adapter - steinball valve
17	10-1950	6-32 Round head screw 1 5/8” long
18	95-2616	Front outer case lower
19	95-0116	Fulcrum and drain casting
20	10-1049	Nipple 1/2” IPS 2 1/4” long stainless steel
21	10-1041	Ball valve stein
-	95-0115	Fulcrum and drain assembly, Items 1 through 12, 14, 15, and 19

MISCELLANEOUS COMPONENTS

CAST-IN HEATING ELEMENTS:

Located under the sterilizing cylinder is a bank of (3) U-shaped heating elements. These elements are welded in place in a protective aluminum shield. The elements cannot be removed, and in the unlikely event that one or all fail, the complete cylinder must be replaced.

THE LOW WATER CUT-OFF (MANUAL RESET):

Fastened to a special mounting brace behind the front panel, the Low Water Cut-Off acts to shut off the complete unit, should the water run dry. The Low Water Cut Off is factory set, to shut the unit off when the cylinder temperature rises between 380° and 440° Fahrenheit.

When the Sterilmatic is turned on without water or the water has been evaporated away, the temperature of the aluminum sterilizing cylinder will rise and by heat induction effect the Low Water Cut-Off. Its inner electrical contacts will be forced open from heat expansion, thus cutting off the flow of electric current to the heating elements. With the replacement of water into the cylinder the cylinder temperature will drop and the contacts of the Low Water Cut-Off can be again closed. The unit will only restart after the manual button has been re-set.

THE SAFETY VALVE

The Safety Valve is factory set to automatically open and exhaust excess steam from within the sterilizing cylinder, thereby assuring that operating pressures remain within safe limits. The lever action of the safety valve must be free to operate unrestricted at all times. If the Safety Valve should leak continually with a pressure build-up or should it cause an interruption on a sterilizing cycle prematurely (below 124° Centigrade on the temperature gauge), it must be replaced.

THE FLUE

The Flue serves as a protective shield for the safety valve, exhaust valve, and electrical components as well as a mounting base for the control panel. The Flue cover may be removed to allow more room for servicing the control components.

THE EXHAUST SOLENOID VALVE

The exhaust solenoid is normally closed. It opens at the start of heating cycle to allow cold air to escape the chamber. It closes when chamber temperature reaches 209°F (98°C). It also opens during a FAST VENT cycle.

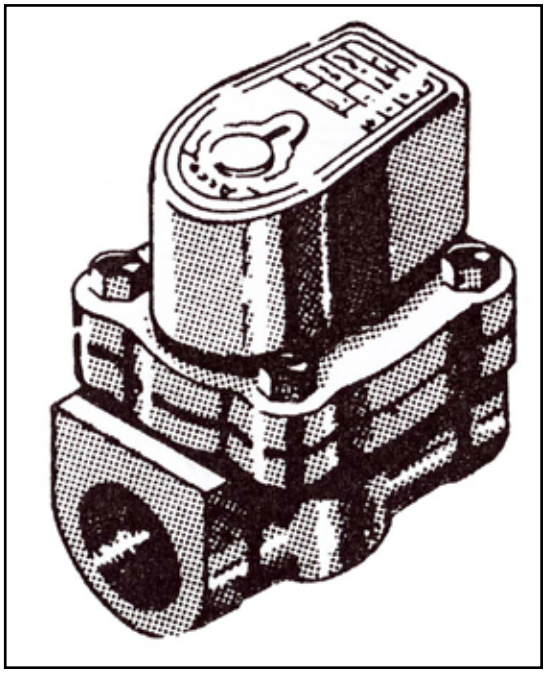


Figure 5

TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE	CORRECTION
Sterilizer fails to operate at all (no pressure build up).	1. Not installed correctly. 2. Blown fuse. 3. Contactor burned out. 4. Wiring is defective.	1. Check wire diagram for correct hook up. 2. Replace fuse. If it blows, check that source of electric supply is 60 amps. 3. Replace. 4. Check all wiring. Repair or replace.
Sterilizer operates, but fails to build up 15.5 PSI pressure.	1. Current not heating all of the elements. 2. Exhaust valve fails to hold pressure at 15.5 PSI. 3. Steam leaks around door. 4. Safety valve blows-off prematurely.	1. Remove lower front panel and see if the heating elements are working.. 2. Replace exhaust valve. 3. Check for worn gasket or make door adjustment. 4. Replace safety valve.
Unit releases pressure before cycle has terminated on timer.	1. Low water cut-off has functioned prematurely.	1. Replace low water cut-off.
Left and/or right side(s) heating element(s) remain on during TIMING/STERILIZATION cycle.	1. Contactors of the temperature control switch remains closed.	1. Replace switches.

ERROR CODES

When an error occurs such as a Low Water condition, an error number will be displayed on the Digital LCD Display. Following is a list of the error numbers and their descriptions;

ERR 01

Factory calibration corrupted. Must perform factory calibration.

This would typically be done initially at the factory only

ERR 02

User setup data corrupted, user setup will be reset to defaults on any key press

ERR 03

Thermistors probe input open. This indicates one of three conditions;

1. The user did not set a temperature before starting a cycle
2. One or more probe wires are not connected
3. The probe has failed and should be replaced

Once the problem has been resolved any key press will clear the error and stop the buzzer

ERR 04

Thermistor probe over max temperature limit of 350°F (177°C)

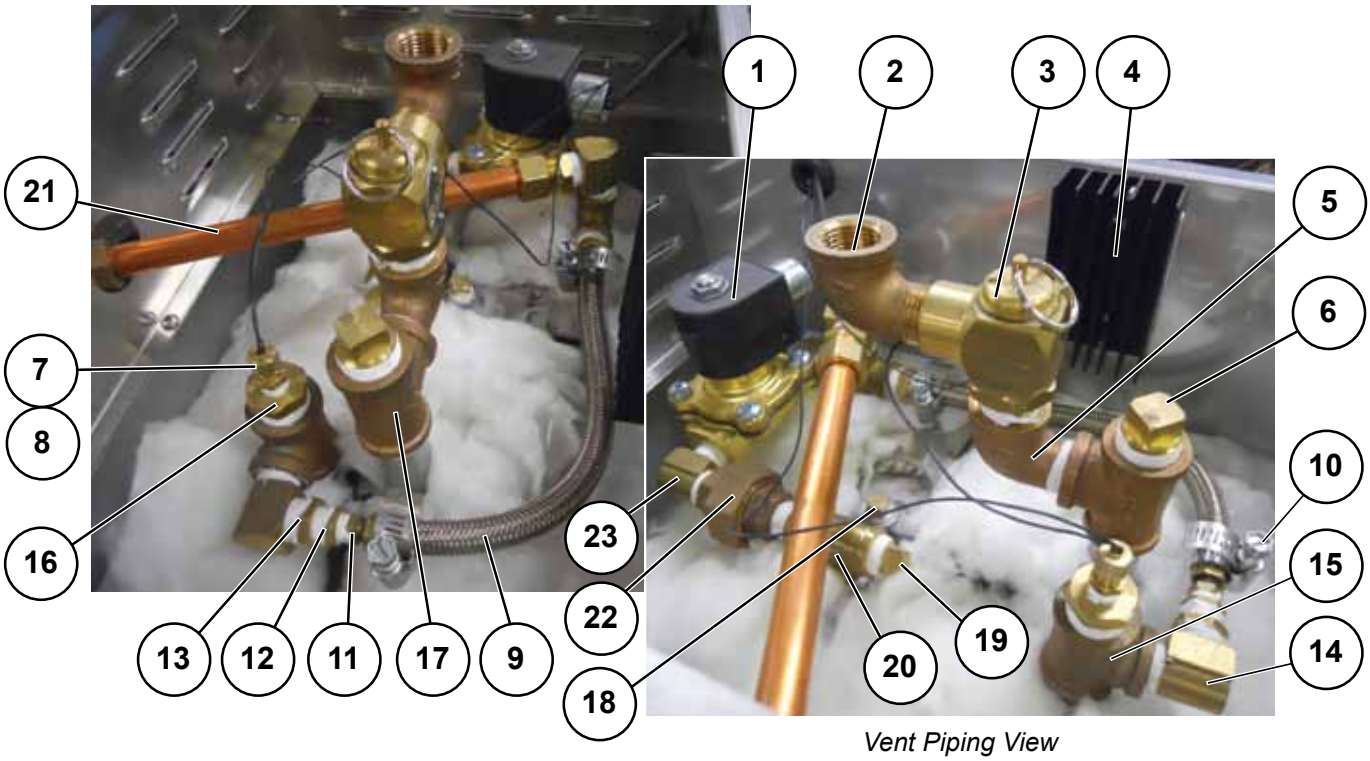
ERR 05

PCB ambient sensor senses temperature above limit of 115°F (46.1°C)

ERR 06

Low water warning. Water must be added then hit the RESET button.

ILLUSTRATED PARTS LIST



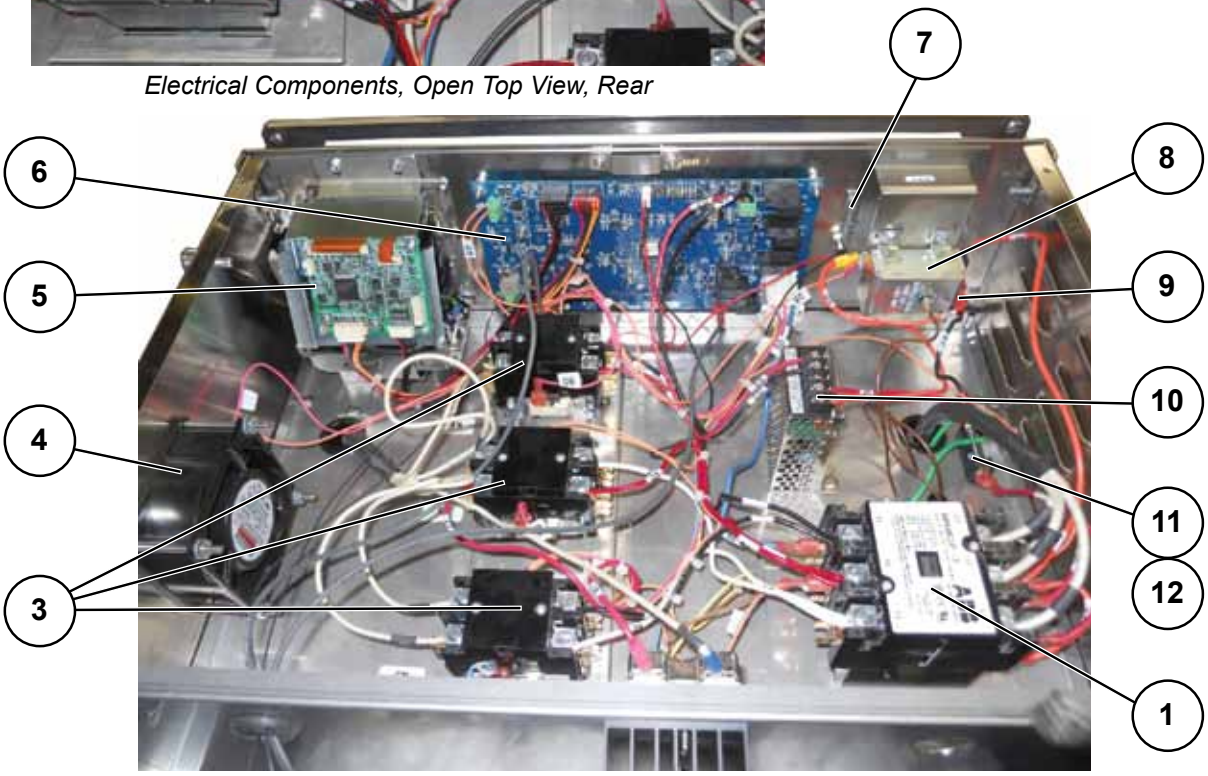
Vent Piping View

ITEM	PART NO.	DESCRIPTION	QTY
1	10-0938	Exhaust Solenoid Valve, 220/240 Volts	1
2	95-3730	90° Street Elbow, Brass, ½" IPS, (*reworked*)	1
3	10-7942	Safety Valve, 17 lbs	1
4	14-0175	Heat Sink	1
5	10-2863	90° Street Elbow, Brass, 1/2" NPT	1
6	10-3327	1/2" IPS Plug, Square Head, Brass	1
7	95-6318	Compression Tube Fitting, 1/8" x 1/4", Brass (*Drilled out with #29 – 0.136" Bit*)	1
8	14-0475	Temperature Probe (*Not Shown*)	1
9	15-7212	Hose, S/S, 9" Length	1
10	10-3945	Hose Clamp	2
11	95-6319	Compression Fitting, 1/8"-27 NPT, Brass (*Drilled out orifice with 0.0625" bit*)	1
12	10-7988	1/4 NPT- 1/8 FPT Bushing, Brass	1
13	10-3741	3/8 – 1/4 Hex Bushing	1
14	10-1054	3/8 IPS Elbow, Brass	2
15	10-1056	1/2 - 1/2 - 3/8, Tee, Brass	1
16	08-5007	1/2 - 1/8 NPT Reducer Bushing, Brass	1
17	10-3352	1/2" NPT Tee, Brass	1
*18	08-4999	1/4" NPT Plug, Brass	1
19	10-3644	3/8" IPS Plug, Square Head, Brass	1
20	10-1055	3/8 – 3/8 – 3/8 FPT Tee, Brass	1
21	95-3216	5/8" OD Copper Tubing, Soft, 9" Length	1
22	10-7987	3/8" IPS Close Nipple	1
23	10-1057	3/8" IPS Straight Union, Brass	1

* Reserved for secondary temperature probe used only for testing calibration of autoclave.

ILLUSTRATED PARTS LIST

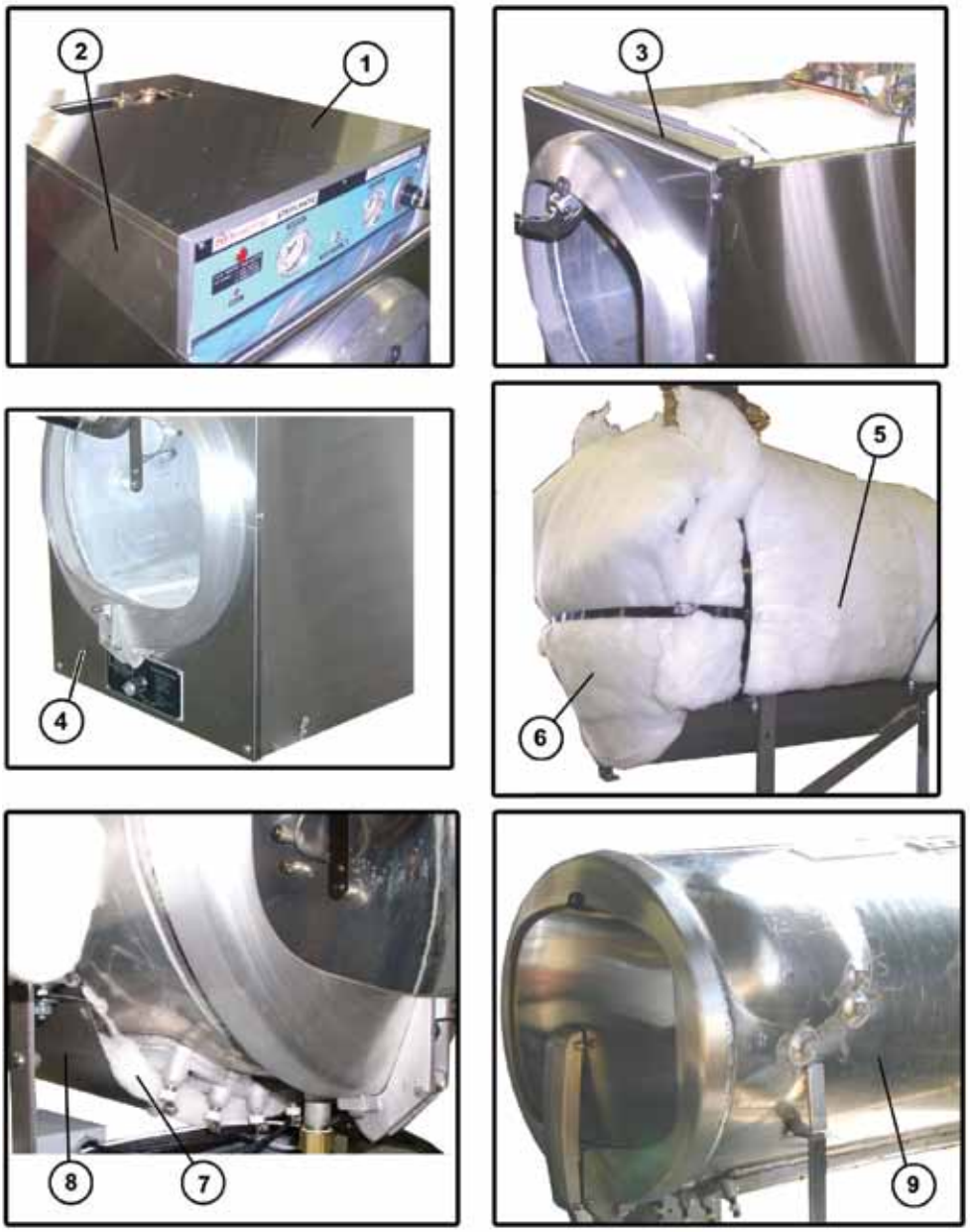
Electrical Components, Open Top View, Rear



Electrical Components, Open Top View, Front

ITEM	PART NO.	DESCRIPTION	QTY
1	09-6484	Contactor, 240V, 75 Amp	1
2	14-0176	Solid State Relay, 50 Amp	1
3	14-0177	Contactor, 2 Pole	3
4	14-0174	Axial Fan, 230V	1
5	14-0149	Printer	1
6	14-0161	Controller Board	1
7	14-0472	Low Water LED	1
8	10-5990	Low Water Cutoff	1
9	14-0162	Power Switch	1
10	14-0181	Power Supply	1
11	14-0180	Fuse, Slo-Blo	1
12	14-0178	Fuse Holder	1

ILLUSTRATED PARTS LIST

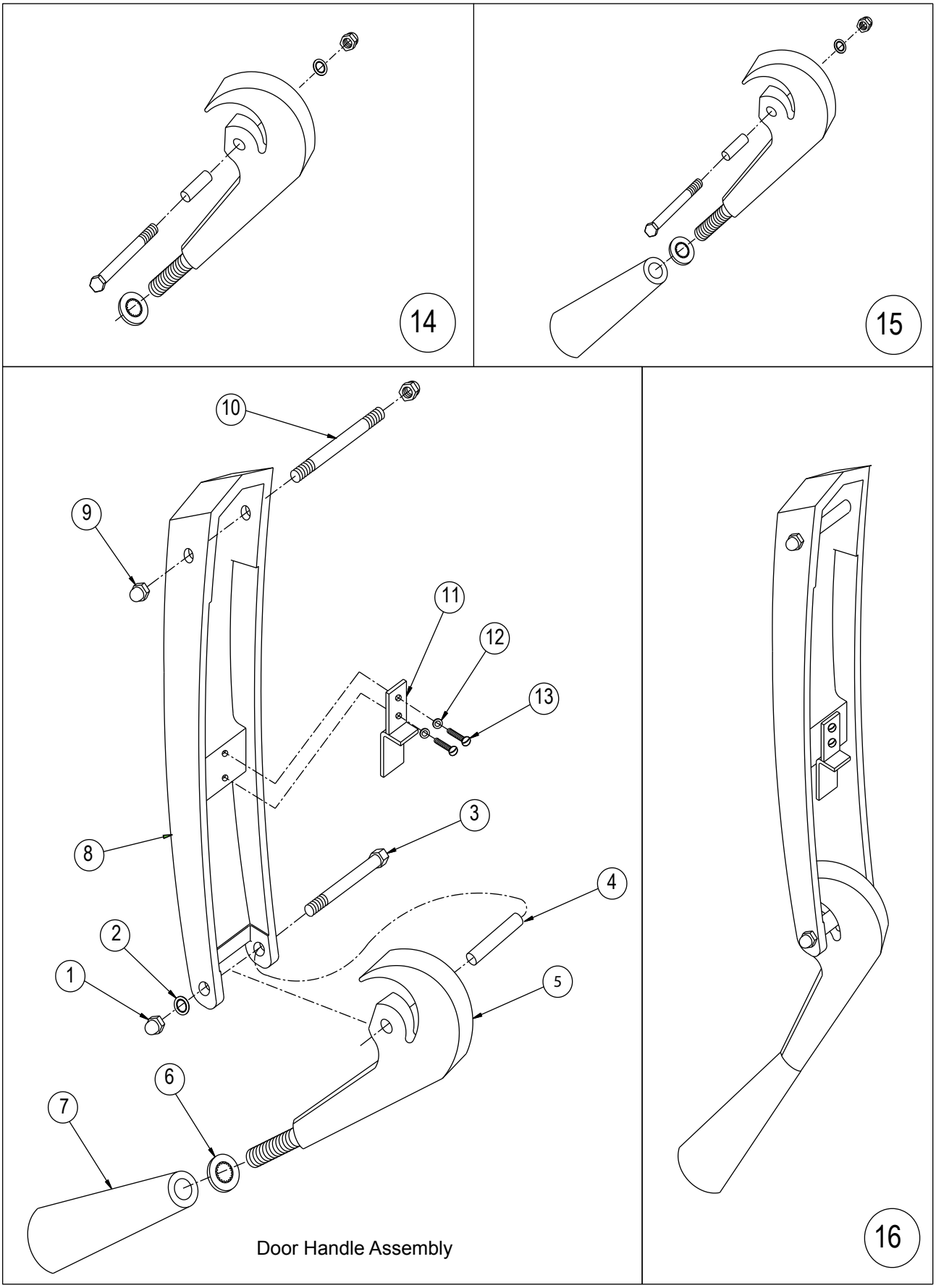


ITEM	ALL MODELS		DESCRIPTION
	QTY.	PART NO.	
1	1	95-6236	Flue Cover Assy.
2	1		Flue Outer Case Wrap
3	1	95-2650	Upper Case, Front
4	1	98-4371	Lower Case, Front w/cutout
	1	95-2616	Lower Case, Front (old style w/o cutout)
5	1	10-6363	Insulation, Body
6	1	10-6365	Insulation, Back
7	1	10-6364	Insulation, Bottom
8	1	95-0465	Bottom Cover for Elements
9	1	95-2628	Cylinder, 208V - 240V (Shown with Door Assy.)

ILLUSTRATED PARTS LIST

ITEM	ALL MODELS		DESCRIPTION
	QTY.	PART NO.	
1	1	95-3196	Outside Case, Left Side
2	1	95-3195	Outside Case, Right Side
3	1	95-3194	Outside Case, Back
4	1	10-0226	Handle Bumper
5	1	95-3484	Terminal Box Cover
6	2	95-2545	Pan Rack, 1 Left & 1 Right
7	1	95-2637	Condensate Baffle, Upper
8	1	95-3207	Perforated Water (*Splash*) Baffle
9	4	95-3284	Wear Strip

ILLUSTRATED PARTS LIST



Door Handle Assembly

ILLUSTRATED PARTS LIST

DOOR HANDLE ASSEMBLY

ITEM	PART NO.	DESCRIPTION
1	10-2318	10-32 Acorn Nut
2	10-2514	#10 Shakeproof Lockwasher
3	95-0571	10-32 Machine Screw 1 3/8” Lg.
4	95-0120	Bearing Spacer
5	95-0136	Door Lock Casting
6	10-2517	3/8” Shakeproof Lockwasher
7	10-0050	Door Lock Knob
8	95-0134	Door Handle Casting
9	10-2359	1/4”-20 Acorn Nut
10	95-0658	Door Handle Bearing Stud
11	95-0659	Door Handle Bearing Plate
12	10-2513	1/4” Shakeproof Lockwasher
13	10-1731	1/4”-20 Machine Screw 5/8” Lg.
14	95-0190	Door Lock Casting Assy. (Items 1 through 6)
15	95-0145	Door Lock Knob Assy. (Items 1 through 7)
16	95-0144	Complete Door Handle Assy. (Items 1 through 13)
17	95-0198	Handle Bushing (Not Shown)